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IS 10008 (1992): Beater addition jointings - Specification
[MED 30: Gaskets and Packing]

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विडोलक परिवर्धन संधियाँ — विशिष्टि

(पहला पुनरीक्षण)

Indian Standard

BEATER ADDITION JOINTINGS — SPECIFICATION

(First Revision)

(Incorporating Amendment No 1)

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BUREAU OF INDIAN STANDARDS
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

Price Group 2

Gaskets and Packings Sectional Committee, LM 19

FOREWORD

This Indian Standard (First Revision) was adopted by the Bureau of Indian Standards, after the draft finalized by the Gaskets and Packings Sectional Committee had been approved by the Light Mechanical Engineering Division Council.

This Indian Standard originally published in 1981 has been revised to modify the various requirements so as to align them with the accepted practice. Also, in this revision, the requirements and tests for moisture content, loss on ignition and water absorption have been deleted and instead the requirements for resistance to Oil No. 3 and Fuel B conforming to IS 2712 . 1979 have been included

This edition 2 1 incorporates Amendment No 1 (May 1994). Side bar indicates modification of the text as the result of incorporation of the amendment.

Indian Standard

BEATER ADDITION JOINTINGS — SPECIFICATION

(First Revision)

1 SCOPE

Covers the requirements for asbestos fibre jointing sheet manufactured by a beater process.

2 REFERENCES

IS 2712 : 1979 'Compressed asbestos fibre jointings (*second revision*)' is a necessary adjunct to this standard.

3 FINISH

The surface shall be reasonably smooth and free from lumps and indentations

4 DIMENSIONS

4.1 Size

The length and the width of the sheet shall be as agreed upon between the manufacturer and the purchaser

4.2 Thickness

The sheets shall have permissible variation of nominal thickness as mentioned below.

Nominal Thickness mm	*Permissible Variation Thickness Min*	*Maximum Permissible Thickness* mm
0.40	0.35	0.45
0.50	0.45	0.55
0.60	0.54	0.66
0.70	0.63	0.77
0.75	0.67	0.83
0.80	0.72	0.88
1.00	0.90	1.10
1.20	1.08	1.32
1.50	1.37	1.63

NOTE — The above thickness tolerances are permissible variations applicable to a given lot of sheets or gaskets. Where other thickness of sheets are necessary due to application, the tolerance on the individual sheet shall be as agreed to between the purchaser and the supplier

4.2.1 The thickness of the unconditioned specimens shall be measured with a suitable measuring instrument with an accuracy of 0.01 mm with a contact gauge diameter of 6.3 mm.

5 CONDITIONING OF TEST PIECE

Conditioning of the specimens shall be carried out prior to all tests as laid down in Annex A.

6 DENSITY

The range of density of the jointing shall be between 0.8 g/cm^3 to 1.3 g/cm^3. Higher value of density can be specified if agreed to between the purchaser and supplier

7 TENSILE STRENGTH

The minimum tensile strength when tested in accordance with Annex B shall be 4 MPa

8 COMPRESSIBILITY

When tested in accordance with Annex C, the compression values shall comply with the following:

Min — 15% *Max* — 50%

9 RECOVERY

After a period of 1 min, the specimens tested under **6** (compressibility) shall be tested for recovery in accordance with Annex C and the minimum value expressed as the average shall be 20 percent

10 RESISTANCE TO OIL NO. 3 AND FUEL B

The requirements shall be as agreed to between the purchaser and the supplier. The method of test shall be as per Annex E of IS 2712 : 1979

11 SAMPLING

The sample size shall be as specified in Annex D.

12 MARKING

Each sheet shall be as identified by the following information on a label pasted in one corner:

a) Indication of the source of manufacture,

b) Grade, and

c) Thickness.

13 PACKING

Beater addition jointings may be supplied in sheet or in rolls and shall be suitably packed to prevent damage in transit.

ANNEX A

(*Clause* 5)

METHOD OF CONDITIONING

A-1 Clean cut test pieces are conditioned by placing them in an oven at a temperature of 100 ± 2°C for 1 h

A-2 The test piece/pieces shall then be allowed to cool to room temperature for at least 1 h before the tests are carried out

A-3 Cooling shall be carried out in a desiccator containing anhydrous calcium chloride

A-4 Sulphuric acid shall never be used in the desiccator for beater addition jointings.

ANNEX B

(*Clause* 7)

TEST FOR TENSILE STRENGTH

B-1 The test shall be carried out on six test pieces.

B-2 Each test piece shall be 230 mm long and 25 mm wide. The test pieces shall be cut from the sheet, preferably with a die punch, in such a manner that the longest axis is at right angles to the grain direction.

B-3 The test pieces shall have clean and uniform edges. Samples with dents, uneven cut or any other deformity shall be discarded.

B-4 Immediately on removal from the desiccator, the thickness of each test piece shall be measured with a micrometer at about four places within 50 mm on both sides of the centre. The smallest dimensions shall be taken as the thickness.

B-5 After measurement, each test piece shall be gripped between the jaws of a suitable tensile testing machine, the distance between the jaws being approximately 100 mm.

B-6 The rate of traverse of the moving jaw of the machine shall be 230 mm/min

B-7 In case the test piece breaks at the jaw, the reading should not be taken into consideration.

B-8 The tensile strength shall be determined as:

$$\frac{\text{Breaking load}}{\text{Cross-section area of the test piece}}$$

B-9 About 4 readings shall be available to obtain the average tensile strength

B-10 ACCEPTABILITY CRITERIA

B-10.1 The average of the six readings obtained on the specimens as described above shall meet the minimum requirement of the specified value of tensile strength given in the specification for every BTA jointing material. The maximum permissible number of individual readings not meeting the minimum requirement of the specified value shall be 3.

B-10.2 When the sheets for testing tensile strength are drawn on the basis of lot sizes given in Annex D the permissible number of sheets failing to meet the minimum requirement of the specified value is given below.

Lot Size Group	*Rejection No.* (*R*)
A	0
B	1
C	1
D	2

If the total number of non-conforming sheets is greater than the corresponding rejection number *R* given in the above table, the lot shall be rejected.

ANNEX C

(Clauses 8 and 9)

TEST FOR COMPRESSIBILITY AND RECOVERY

C-1 The test shall be carried out on four test pieces to obtain the average result.

C-2 The size of the test piece shall be 50 × 50 mm and thickness 1.6 mm.

C-3 APPARATUS

C-3.1 Anvil

A hardened and ground surface of a minimum diameter of 32 mm

C-3.2 Penetrator

A steel cylinder with the end hardened and ground and of 6.3 ± 0.025 mm diameter. The penetrator is guided in its descent so that the surface remains parallel to the anvil

C-3.3 Dial

A micrometer indicator dial reading to 0.01 mm.

C-3.4 Pre-load

A pre-load of 2.25 kg which includes the weight of the penetrator to an accuracy of ±1 percent

C-3.5 Loading Device

A device for applying a major load of 110.0 kg to an accuracy of ± 1 percent which is addition to the pre-load.

C-4 TEST METHOD

C-4.1 Each test specimen or set of plied test specimens is centred on the anvil and the pre-load is applied gently and held for 15 s, when the thickness of the specimen under pre-load is read to the nearest 0.002 mm and recorded (P)

C-4.2 The major load is then applied in a slow uniform manner, so that the total load is applied within 10 s. The total load is maintained for 60 s, when the compressed thickness of the specimen is read to the nearest 0.002 mm and recorded (M).

C-4.3 The major load is then immediately removed, leaving the pre-load, and after a period of 60 s the recovered thickness of the specimen under the original pre-load is read to the nearest 0.002 mm and recorded (R).

C-5 CALCULATION

C-5.1 Compressibility, percent $= \frac{P-M}{P} \times 100$

C-5.2 Recovery, percent $= \frac{R-M}{P-M} \times 100$

C-6 ACCEPTABILITY CRITERIA

C-6.1 The average of four readings obtained on the specimens as described above shall meet the minimum requirements of the specified values of compressibility and recovery given in the specifications for every BTA jointing material. The individual value of compressibility obtained shall not go beyond −4 percent of the minimum value and +4 percent of the maximum value. The individual value of recovery obtained shall not go beyond −5 percent of the minimum value.

C-6.2 When the number of sheets for testing compressibility are drawn on the basis of lot sizes given in Annex D the permissible number of sheets failing to meet the minimum requirement of the specified value is given below.

Lot Size Group	*Rejection No (R)*
A	0
B	1
C	1
D	2

If the total number of non-conforming sheets is greater than the corresponding rejection number R given in the above table, the lot shall be rejected.

ANNEX D

(*Clause* 11)

SAMPLING

Sl No.	*Test*	*Sample Size*			
		Group A Lot Size Up to 250 kg	Group B Lot Size 251-500 kg	Group C Lot Size 501-1 000 kg	Group D Lot Size Over 1 000 kg
i)	Thickness	1	2	4	5
ii)	Density	1	2	3	4
iii)	Tensile strength	2	3	5	6
iv)	Compressibility	1	2	3	4
v)	Recovery	1	2	3	4
vi)	Thickness changes . Oil	1	1	2	3
	Fuel	1	1	2	3

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